Personal Computer

# *AMIGA 1060*

# *SIDECAR*

# USER MANUAL

Commodore

# Table of Contents

1. Introduction ..... 3
1.1 Attaching the Sidecar to the Amiga ..... 3

2. Activating the PC from the Workbench ..... 6

3. Activating the PC from a CLI ..... 7

4. Emulating the PC ..... 8
4.1 Display modes ..... 8
4.2 Keyboard ..... 9
4.3 Parallel Port ..... 10

5. The PC Display Windows ..... 12
5.1 Borders ..... 12
5.2 Size of the window ..... 12
5.3 Number of Text colors ..... 13
5.4 Changing colors ..... 14
5.5 Multiple windows ..... 15
5.6 Display priority ..... 16

6. Pulldown menus of the PC-window ..... 17

Appendix A : DIP switches ..... 20

Appendix B : Expansion slots for cards ..... 25

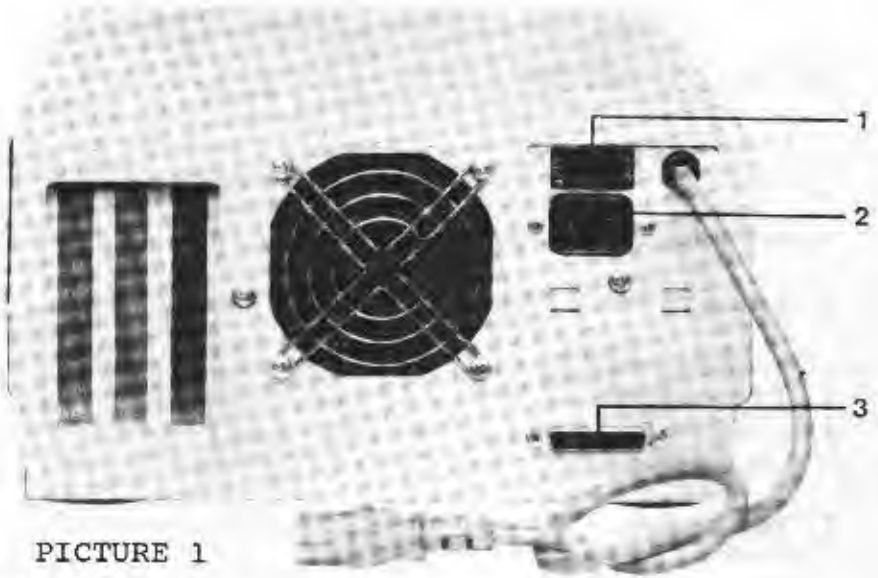
Appendix C : Connecting external disk drives ..... 27

Appendix D : Installing a hard disk ..... 29

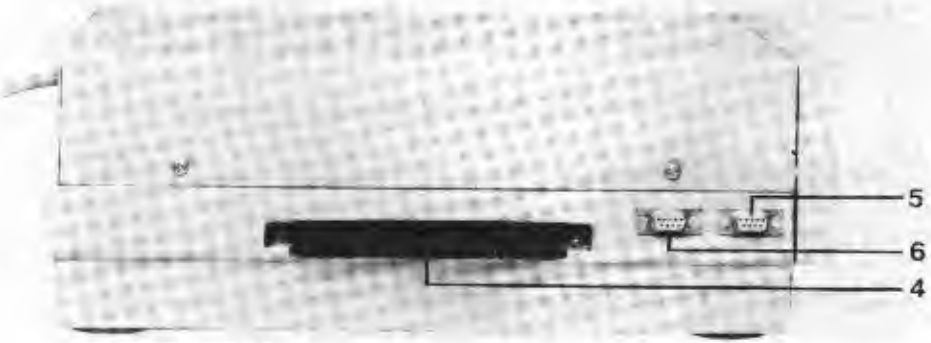
Appendix E : The 8087 numeric co-processor ..... 33

Appendix F : RAM expansion for the PC ..... 35

Appendix G : RAM expansion for the Amiga ..... 37




PICTURE 1




PICTURE 2

1 POWER SWITCH
2 POWER CORD
3 FLOPPY DISK CONNECTOR
4 EXPANSION PORT
5 MOUSE CONNECTOR
6 JOYSTICK CONNECTOR

# 1. Introduction

Welcome to the Commodore Sidecar, a system that combines hardware and software to give complete IBM-PC compatibility to your Amiga 1000 computer. This brief tutorial describes how to set up and use the Sidecar. It presumes that you have already put together your Amiga and that you know how to operate it. Please refer to the manual "Introduction to Amiga" for information about setting up and operating your Amiga.

NOTE: The Sidecar can only be used on an Amiga expanded to 512 KB by means of installing the memory expansion cartridge (A 1050) in the front of the main computer housing.

This document is not a tutorial on using the IBM-PC. For information on the correct usage of the PC, you will have to study the documentation that comes with the IBM-PC operating system and any application software you choose to use with your Sidecar.

If you are wondering what IBM software will work with your Sidecar, the answer is simple: all IBM-PC software will work with the Sidecar.

## 1.1 Attaching the Sidecar to the Amiga

WARNING: Before you start, you must make sure that your Amiga is powered off.

The Sidecar plugs into the side of the Amiga. It fits onto both the Amiga expansion port and the connectors where the mouse is attached. The expansion port and connectors are located on the right side of the Amiga box (when facing the front of the Amiga).

To attach the Sidecar, first you have to clear the way: unplug the mouse, and remove the cap that covers the Amiga expansion port. There's a little slot beneath the cap, where you put your fingertip to pry the cap off. Apply gentle pressure and the cap will come loose. Save this cap in case you ever want to detach the Sidecar from your Amiga. Next, place the Sidecar to the right of the Amiga and line up the Sidecar's plugs with the Amiga's connectors. The face of the Sidecar should be flush with the face of the Amiga. When all the Sidecar plugs are lined up with Amiga connectors, slide the Sidecar gently but firmly into the Amiga sockets.

You do not have to run a new power cable to the Sidecar, because the Sidecar has a convenient power-cord extender. Notice that a cable comes out of the back of the Sidecar. This is the power-cord extender. Find the cable that runs from the power outlet to your Amiga, unplug this cable from the Amiga and plug it into the Sidecar. Then plug the Sidecar's power-cord extender into the Amiga, in the socket where the power cable had been attached to the Amiga. Electricity flows into the Sidecar, and then through the extender to the Amiga.

On the front of the Sidecar cabinet are the connectors for the mouse and other controllers. Plug the mouse into the left connector.

Now you can turn on the power for both the Sidecar and the Amiga. The power switch for the Amiga is on the left side of the Amiga, and the power switch for the Sidecar is on the back of the Sidecar. Turn on the power switch for the Amiga. Because the Amiga gets its power through the Sidecar, the Amiga won't power up until you turn on the power to the Sidecar. Now turn on the power switch for the Sidecar.

Then you go through the normal start-up procedure for your Amiga, which includes using your own Kickstart and Workbench disks to initiate the Workbench display.

**BEWARE**: You must never turn on power to the Sidecar unless the Amiga is already powered up. Doing so can seriously damage the Amiga hardware. This is especially important to note if you do not use the Sidecar power-cord extender and you choose instead to have separate power cables for the Amiga and the Sidecar. If you follow the normal procedure of plugging the Sidecar power-cord extender into the Amiga, you can prevent this problem entirely.

## 2. Opening the Sidecar display programs

When you put the Sidecar disk into one of the disk drives, an icon for the disk will appear on the Workbench screen. Double-click on the Sidecar disk icon to open the disk's top drawer. In the top drawer you will see, among other things, two icons that look like graphical representations of IBM Personal Computers. These two icons allow you to open programs that emulate the two IBM-PC display types: Monochrome and Color.
Notice that one icon is in two colors and has the words "PC Mono" beneath it. This icon opens the IBM-PC Monochrome display emulator.The other icon is in 4 colors and is labelled "PC Color. It opens the program that emulates the IBM-PC Color display. To open either display, double-click on the appropriate icon.

When you first unpackage your Sidecar, it is configured to power up in Monochrome mode, so if you double-click on the Monochrome icon you will see the diagnostic messages that come up when the Sidecar is powering up. If you double-click on the Color icon, you will see a blank window. The displays will stay like this until you put some software into the Sidecar disk drive.

If you want to use the colour PC screen, no system messages will appear. When the screen is opened the cursor will be in the home position and you must type the following 'blind':

<RETURN> <RETURN> MODE CO80 <RETURN>

Then the DOS prompt ( A> ) will appear and you are ready to enter commands in the usual fashion.

At this point the Sidecar is ready to run IBM-PC software. You should put a PC system disk of your choice into the Sidecar's floppy disk drive. It might be a PC-DOS disk, an MS-DOS disk, a CP/M disk, or any IBM-PC application.

## 3. Activating the PC mode from a CLI

On the Workbench disk that is supplied with the Sidecar there are two programs that activate the PC mode. To use these from the CLI, install the Sidecar and turn on the sytem as described above. Insert the KICKSTART disk in the drive and when the Workbench prompt appears, insert the disk containing the Sidecar software. When the disk Icon appears, double click on it to open a workbench.Next open a CLI window by opening the system drawer and clicking on the CLI icon. If you wish to operate the Sidecar as a monochrome PC type :

```
RUN 'PC MONO'    <RETURN>
```

If you wish to operate as a colour PC, type:

```
RUN 'PC COLOR'   <RETURN>
```

You can then proceed as described above.

# 4. Emulating the PC

This section describes some of the IBM-PC characteristics and how they are emulated by the Sidecar.

### 4.1 Display Modes

The PC has two standard display modes: Monochrome and Color Display. Both of these display modes are available on the Sidecar by using the PC Mono and PC Color Display programs. Running one of these programs is similar to turning on a video monitor attached to the PC, except that the PC requires a separate monitor for each mode while the Sidecar requires only one monitor. The Amiga conveniently creates windows and screens which allow multiple display types (such as the IBM-PC display types) to appear on a single monitor.

The IBM-PC Monochrome mode normally displays only one color (green) on a dark background. Programs can display an intensified version of the one color, and can also reverse the color with the background so that dark characters appear on a color background.

The Sidecar Monochrome display emulates this mode without these chromatic restrictions. In the Sidecar Monochrome mode, the color of the text, the intensified text and the background are independent of each other, and you are able to modify these colors in any way you choose by selecting the COLOR menu option (see the **MENUS** section). Normally the text of the Monochrome display appears in a window on the Workbench screen, although the Monochrome display window will move to its own screen if you choose to use fewer colors than the normal 4 colors of the text display.

In the IBM-PC Color Display mode, both text and graphics can be displayed. Text can be rendered in up to 16 colors, and graphics can be up to 4 colors. The various Color display modes of the PC are generally incompatible with the display

characteristics of the Amiga Workbench screen, so a new screen is created for the Sidecar Color display. You can modify the colors of the Sidecar Color display windows to any colors that suit you by selecting the COLOR menu option (see the MENUS section).

IBM-PC applications will require either the Monochrome or Color display modes. Some programs may support both. The documentation provided with the application will tell you what display it will use. You should activate the appropriate Sidecar display program to create the required display, in the same way that you would turn on a PC video monitor to interact with the application.

The only PC display characteristic that's not supported by this release of the Sidecar is the blinking of text. Extremely few IBM-PC software packages use the blink characteristic, because it is widely regarded as distracting and hard on the eyes. It was left out of the Sidecar display programs in order to improve the performance of text rendering.

### 4.2 Keyboard

You send input to your IBM-PC programs through the Amiga keyboard. You simply activate any of the Sidecar display windows by clicking on it, and then you type as normal.

For installing the national keyboard driver you have to load the appropriate driver from your Sidecar System disk. There are four keys on the PC keyboard that aren't on the Amiga keyboard. However, by typing certain control sequences you are able to send these key sequences to PC programs running on the Sidecar. The following table lists the PC keys and the Sidecar translations. Notice that the translations are mnemonic to help you remember them.

| PC KEY | SIDECAR EQUIVALENT |
|---|---|
| Num lock | Right AMIGA and N |
| Scroll Lock | Right AMIGA and S, or |
| | Right AMIGA and HELP Key |
| Ptr Sc * | Right AMIGA and P |
| + on Keypad | Right AMIGA and + |

You can view a copy of this list by selecting the convenient INFO menu option. See the "MENU" section for details.

### 4.3 Parallel Port

Some IBM-PC applications running on the Sidecar will be able to print via a printer attached to the Amiga parallel port.

On your Sidecar Workbench disk you will find an icon that looks like a printer sitting atop an IBM-PC. The icon is named "LPT1" (which is the IBM-PC acronym for "Line Printer 1"). This icon represents the ability to assign the Amiga parallel port to the Sidecar. The Sidecar can then use the Amiga parallel port as an IBM printer port, which is the most common use of the IBM-PC's parallel port.

Before you can use the Amiga parallel port from the Sidecar, you have to dedicate the parallel port exclusively to the Sidecar. This is because only one application at a time can have access to the Amiga parallel port. When any application is using the Amiga parallel port, no other application is able to use it.

When you double-click on the LPT1 icon, a program runs which attempts to obtain the parallel port for Sidecar usage. It is successful only if the parallel port is not currently in use. If the parallel port is in use by some other system software, you will receive an error message and the Sidecar will not be able to print via the Amiga parallel port.

If the LPT1 program is able to get the parallel port for the Sidecar, the LPT1 program puts up a small title bar on the Workbench screen with the words

"Parallel Port allocated to Sidecar LPT1."

Note that when the parallel port is in use by the Sidecar, it is not available to Amiga programs.

You release the parallel port from the exclusive use of the Sidecar by hitting the close gadget of the title bar. After you do this, the Sidecar will no longer be able to access the Amiga parallel port.

Because of limitations in the Sidecar system, using the Amiga parallel port as an IBM-PC printer port will work only for certain applications on the Sidecar. There is no convenient way to describe which print applications will work and which won't. You will have to use trial and error to discover if a given application will work.

The reason for this is technical: LPT1 on the Sidecar side works only for applications that use interrupt handshaking.Print routines that use busy-wait loops (like the routine that runs when the user hits the "Prt Sc" key) will not work dependably.

# 5. The PC display windows

This section describes the characteristics and capabilities of the Sidecar display windows.

### 5.1 Borders

The "border" of a window is the area around the perimeter of the window. The border contains the "gadgets" you use to size and position your window.

You can choose to have the window borders be visible or hidden. When the window borders are visible, you can use the window gadgets as usual. When the borders are hidden, you can see all 80 columns and 25 lines of the Amiga display. You can always use the menus whether or not the borders are visible.

You can make the borders of your display window appear and disappear by double-clicking in the window. Alternatively you can use the BORDER menu option to make the borders come and go.

When you size the window to fill the entire screen, the window borders vanish automatically. Likewise, when you select the FULL SIZE menu option, the borders vanish automatically after the window is enlarged to the full size of the screen. If you select the SMALL SIZE menu option the borders reappear automatically.

### 5.2 Size of the Window

You can enlarge the window to the full size of the screen automatically by selecting the FULL SIZE menu option. The window will revert to its small size when you select the SMALL SIZE option.

When the window is the full size of the display, and the borders are hidden, the full 80-column by 25-line dimensions of IBM-PC text will be displayed.

### 5.3 Number of Text Colors

Normally, PC Monochrome text can appear in up to 4 colors. PC Color text can appear in up to 16 colors. The Sidecar display emulator will create all of these colors for you. However, because of restrictions in the Amiga hardware, the more text colors you use, the harder the Amiga must work and the longer it takes for your text to be displayed. Fortunately, you can use fewer colors if you wish to have better performance and are willing to sacrifice some of the colors. Sidecar lets you choose.

Using all of the text colors both slows the text display and slows the performance of other programs running on the Amiga. However, if you use fewer text colors, the Amiga will be able to work much more efficiently.

There are menu options available to let you choose how many colors of text you want to have displayed. These options let you choose to have 2, 4, 8, or 16 colors in Color display, and 2 or 4 colors in the Monochrome display.

The performance improvement from 16-color to 8-color text is significant.

Note that these options are for text only; they have no effect on the color graphics display, which is always 2 or 4 colors, depending on the display type created by a particular application.

### 5.4 Changing Colors

You can change any of the colors of your display window by selecting the COLOR menu option.

When you select this option, a special color requester appears. This requester has these features:

In the lower-right there are rectangles of color. Each of these rectangles represents one of the colors of the display. By selecting one of these rectangles you choose to work with a particular color.

You select a color rectangle by moving the pointer over that color and then clicking the left mouse button once. The color that you have selected fills the box at the top left of the requester. After you have selected a color, you can modify it by using the sliders at the top right of the requester. A color slider is a wide box with a small rectangle inside it. There are three sliders, one for each of the three components of Amiga color: red, green, and blue. The sliders are labelled with the initials "R", "G", and "B" to indicate which slider controls which color component. Whenever you select a color, these sliders are changed to reflect the amount of red, green and blue currently in the color you've chosen.

You adjust a slider by moving the pointer over the slider's "knob" (the small rectangle inside the wide box), pressing down the left button and holding the button down while moving the mouse left or right. If you move the knob to the left, less of that color component will be added to the color. If you move the knob to the right, more of the component will be added to the color. For instance, if you select the knob of the "R" slider and slide the knob all the way to the left, there will be no red in the current color. If you slide it all the way to the right, the color will have as much red as it can. You can control the green and blue color components in the same way.

If you want to copy the color you're currently using, select the COPY-gadget at the lower right of the requester and then select the color rectangle where you want the current color to be copied.

The RANGE-gadget allows you to create a range of smoothly-shaded colors. The colors that you create will range from a starting to an ending color that you choose. The starting and ending colors are known as the "endpoints."

To make a range, you select the RANGE- gadget, and then pick the two colors that you want for the endpoints of the range. The colors between your endpoints will then be filled in automatically.

Note that if you pick starting and ending colors that are very different, the range will not be as smooth as if you pick colors that are similar.

If you decide that you don't like the changes you've made, you can select the CANCEL-gadget. This will close the color requester and restore the original colors.

If you are satisfied with the current colors, select the OK-gadget. The color requester will close and then you can use your display window with the new colors.

### 5.5 Multiple Windows

You can open multiple windows in any display mode. This allows you to mimic the display of multitasking applications. When you have multiple windows of a display, you can freeze the contents of any window simply by selecting another window

of that display type. You open another window by selecting the menu option **OPEN ANOTHER WINDOW.**

Here's an example of this powerful feature: Suppose you want to write a letter using information from your spread-sheet. If you have opened two display windows, you can make certain information visible in one window and then select the other window, which freezes the display in the first window. If you then exit the spread-sheet and open the text editor, you can compose the letter while referring to the spreadsheet information still visible in the other window.

Here's another example: Software developers can do their compilations in one window, and freeze the error messages (well, nobody is perfect) in that window by selecting a second window to re-edit the file, referring back to the first window for the error information.

### 5.6 Display Priority

This section is somewhat technical and may be ignored if you choose.

All of the Amiga programs run at a certain "priority." The Sidecar display task runs at the normal priority, which is priority of 0 when started from the Workbench and -5 when started from the CLI. When the PC display is changing a lot, the Sidecar display emulator will try to consume a lot of the system time and resources. If the display program runs at a lower priority than other tasks in the Amiga, the display will be rendered unevenly. If the priority of the display program is too high, then the other tasks will be held up and will run poorly.

You can change the priority of the display program to suit your needs. Trial and error will help you decide on the best setting.

## 6.Pulldown Menus of the PC-Windows

The individual menu options displayed in the Sidecar window are described briefly. They apply to both display modes and are activated by the right-hand mouse button. Slide the cursor down to the desired functions and press the command (left) button simulaneously or simply release the right-hand button to make your selection.

PROJECT MENU

SAVE SETTINGS

After you have configured the display to your liking (by various color selections), this command sets up an initialization file on the Sidecar system diskette so that during the boot process your selected display colors are always used.

RESTORE SETTINGS

This restores the colour display to original settings. The display file is simultaneously deleted from the system disk.

INFO

This provides an additional window giving brief information and help in English.

CLOSE

Selecting this option is the same as selecting the window-close gadget in the upper left-hand corner of the screen, i.e. it closes a Sidecar window.

DISPLAY MENU

SIZE

FULL SIZE

The current active window is sized to 80 columns by 25 lines. The borders, if visible, become hidden automatically.

SMALL SIZE

This option will restore the window to its last less-than-full size dimensions and location.

BORDER

SHOW
HIDE

These menu options allow the display window border to be shown or hidden. (The same effect can be achieved simply by double-clicking on the left hand mouse button with the pointer within the PC window.)

COLOR

With this option you can set the colour of any display screen. These colours are saved when you use the SAVE SETTINGS option.

SET CURSOR BLINK RATE

1/2
1
2
4
You can choose how many times per second the cursor will blink.

REFRESH DISPLAY

In case anything disrupts the display, this option allows you to have the entire window redrawn.

DEPTH OF TEXT DISPLAY

2 COLORS
4 COLORS
8 COLORS
16 COLORS

This option lets you select the maximum number of colours for the text. The fewer the colours, the faster the display will be rendered. Note that in monochrome mode you will only be able to select from 2-colour and 4-colour options,

SET DISPLAY TASK PRIORITY

+10
+ 5
0
- 5
-10

This option allows you to select the display priority. Please refer to Section 5.6 for further details. In principle, there is no need to alter this menu option.

INTERLACE

ON
OFF

With this you can turn the Amiga interlace mode on and off. If you have a high persistence monitor, the display is improved when you turn on the interlace.

# Appendix A : DIP switches

**NOTE**: Ensure that there is no power to the Amiga or Sidecar.

Two sets of DIP switches are located in the front right-hand corner of the Sidecar and are accessible after removal of the lid. You may adjust the position of the switches with a screw driver. The DIP switches conform to IBM standards. The switch position OFF is interpreted by the CPU as logical 1 - 5 volt level. The switches affect the following system components:

Description of the row of 8 DIP switches (SW1):

| SWITCH | FUNCTION |
|---|---|
| 1 | OFF: Boot<br>ON : System Diagnosis |
| 2 | OFF: 8087 Co-processor installed<br>ON : 8087 Co-processor not installed |
| 3,4 | Main memory capacity (see below) |
| 5,6 | Video mode at System start-up (see below) |
| 7,8 | Number of floppy disk drives (see below) |

| SWITCH 3 | 4 | SETTING OF RAM CAPACITY |
|---|---|---|
| ON | OFF | 128K |
| OFF | ON | 256K |
| ON | OFF | 512K |
| OFF | OFF | 640K |

If there is no RAM expansion, ie there is only 256K on the main board and no RAM expansion cards are installed, only one of the first two positions above may be used.

If you set DIP switches 3 and 4 to incorrect positions, the RAM check routine in the BIOS will only automatically recognize the first 256K of the installed memory.

| SWITCH 5 | 6 | VIDEO MODE AT SYSTEM STARTUP |
|---|---|---|
| ON | ON | No Video |
| OFF | ON | Colour 40 characters by 25 lines |
| ON | OFF | Colour 80 characters by 25 lines |
| OFF | OFF | Monochrome 80 characters by 25 lines |

| SWITCH 7 | 8 | NUMBER OF FLOPPY DRIVES |
|---|---|---|
| ON | ON | 1 |
| OFF | ON | 2 |
| ON | OFF | 3 |
| OFF | OFF | 4 |

Description of the row of 4 DIP switches (SW-2):

The function of these 4 switches is to set the memory configuration of the 128K of Dual-Port RAM (DPR). 8K is used by the monochrome display and 32K by the colour display. Another 16K is used for maintenance of records and 64K is required for data exchange. The remaining memory capacity of 8K is used for I/O registers.

| SWITCH | FUNCTION | |
|---|---|---|
| 1 | OFF: | The address sector B0000-B1FFF is occupied in the PC address sector. With the switch in this position there must be no external video card in the slot. |
| | ON : | The address sector B0000-B1FFF is now located on the card. Reproduction via the Amiga is not possible. The address sector on the interface is switched off. |

| SWITCH | FUNCTION | |
|---|---|---|
| 2 | OFF: | The address sector B8000-BFFFF is occupied in the address sector of the PC. With the switch in this position there must be no external video card in a slot. |
| | ON: | The address sector B8000-BFFFF is now located on the card. Reproduction via the Amiga is not possible. The address sector on the interface is switched off. |
| 3,4 | | Location of the address sector in the Sidecar (PC) for data exchange purposes. (See below) |

| SWITCH 3 | SWITCH 4 | LOCATION OF ADDRESS SECTOR |
|---|---|---|
| X | ON | A0000 - AFFFF |
| ON | OFF | D0000 - DFFFF |
| OFF | OFF | E0000 - EFFFF |

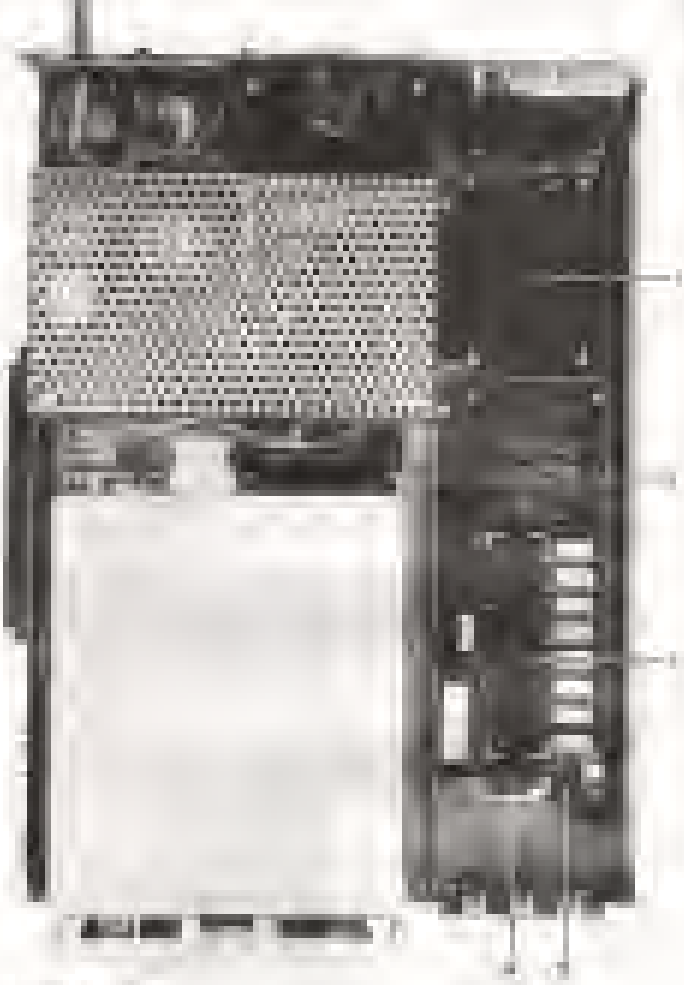


FIGURE 1

4 [illegible]

5 [illegible]

6 [illegible]

7 [illegible]

8 [illegible]

9 [illegible]

## Appendix B : Expansion slots for cards

A number of cards exist which fit into the expansion slots. These include the Standard Monochrome Video card, the Colour Graphics Video Card, the Hard Disk Card and the Parallel and Serial Interface cards. Three slots are available for the installation of cards. Furthermore, other IBM-PC compatible cards can be used. The following description refers to special installation features of the expanison cards.

a) Monochrome Video Card

The Commodore Monochrome Video Card is fully compatible with standard PC video cards. It supports all other video attributes. The card functions without graphic support. During installation, the appropriate DIP switch must be set (See Appendix A).

b) Advanced Graphics Adapter (AGA Card)

The AGA card is a special video card which combines IBM colour graphics , IBM Monochrome/Printer Video facilities, the Hercules Video Card features and the Plantronics ColorPlus Video features on one expansion card. It can display colour graphics software on a monochrome screen as 16 levels of grey and you can set it up for 132 characters in monochrome or colour as well as 640 x 200 pixel graphics in 16 colours. When the card is installed, the appropriate DIP switch must be set (See Appendix A.)

For example:

1) If you want to use the AGA card as a monochrome card, you have to set DIP switch 1 to the ON position.

2) If you want to use the AGA card as a color or emulation card, you must set DIP switches 1 and 2 to

the ON position. This will allow you to use all the features of the card.

c) Parallel Interface Card

The PC addresses $378-$37F (LPT1) are already occupied by the Dual-Ported Ram interface between the systems and cannot be used by the parallel interface. If a PC Printer Card is inserted in one of the slots, it must use the addresses $3BC-$3BF (LPT2). To install the card a special J11 (see picture 5) jumper must be used.

d) Serial Interface Card

The PC addresses $2F8-$2FF (COM2) are also already used and cannot be used by the serial interface card. If a PC Serial Printer Card is inserted in one of the slots, it must use the addresses $3F8-$3FF (COM1).

e) Hard Disk Card

The use of a hard disk card is described in Appendix D.

Installation of extension cards is carried out as follows:

* Ensure that there is no power to the Amiga and Sidecar.
* Separate the Amiga from the Sidecar.
* Remove the cover on the Sidecar. It is held in place by four screws.
* Unscrew and remove the protector cap on the slot.
* Insert the card and tighten the screws that hold it in place.
* Replace the lid on the unit.

# Appendix C : External disk drives

NOTE : Ensure that there is no power to the Amiga or Sidecar.

Connecting one or more disk drives to the Sidecar is very simple. The first is connected by means of the disk port at the back of the unit. The next drive is plugged in to the back of the previous one, and so forth. There is no need to make any changes to the hardware (e.g. change the drive number). You must however set the DIP switches for the correct number of drives. (See Appendix A)

Your Commodore dealer offers two different drives:

**Amiga 1010** - uses 3.5' diskettes, with a capacity of 720K

**Amiga 1020** - uses 5.25' diskettes with a capacity of 360K This unit has its own power supply.

An external drive may be used by both the Amiga and the Sidecar, but it must be connected to the proper side of the system. The 1010 is capable of reading different formats. For example, if it is connected to the port on the back of the Amiga you can use it for Workbench disks. If it is connected to the Sidecar, it uses PC format. The 1020 may be connected to either part of the system but it always stores information in PC format. The Amiga Extras disk with system software Version 1.2 and above contain utilities for reading this format on the Amiga system.

Utilities supplied with the Sidecar allow you to perform some file transfer functions to and from MS-DOS using Amiga DOS. Specifically, you can copy from a MS-DOS device to an Amiga device, from an Amiga device to an MS-DOS device and from an MS-DOS device to an MS-DOS device. The procedure is as follows:

Insert the Sidecar Workbench diskette in the built-in drive in the Amiga, and the MS-DOS diskette which was supplied with the Sidecar in the built-in drive in the Sidecar. Open a CLI window (see the Introductory Guide supplied with the Amiga) and type:

```
MOUNT JF:
ASSIGN
```

Now use the copy command to copy files from one device to another. The syntax of this command is as follows:

```
COPY JF:z:filename TO JF:x:filename
```

If you want to copy files from an Amiga device to a Sidecar device, you have to use the copy command in following way:

COPY DFz:filename to JF:x:filename

where z is the letter indicating the source device and x is the letter indicating the destination device.

Note that using these utilities, you cannot delete or rename MS-DOS files. You can only create new files or overwrite existing files. Also, these utilities do not support the reading of an MS-DOS directory via Amiga DOS.

Note also that MS-DOS devices do not support shared access so that you can only execute one `jf` function at a time.

## Appendix D : Installing a hard disk

NOTE: Ensure that there is no power to the Amiga or Sidecar.

Loosen the four screws on the sides of the Sidecar and lift off the cover. On the right hand side of the Sidecar there are three slots. The right-most or outboard slot is designed to receive the hard disk, as it incorporates an additional boring for a safety screw. In principle any of the slots could be used.

Remove the port protector cap, slide in the hard disk card using gentle pressure and secure the card at the front and back. Put the lid back on and secure it with the screws. You now have an unformatted hard disk that can be accessed by either AmigaDOS or MS-DOS.

NOTE: If the hard disk is to be transported for long distances, the read/write head should be in its transport position to avoid damage and data loss. Please run the program SHIPDISK from your system disk before moving the hard disk.

The system disk contains two programs which partition the drive with the capacity desired for each DOS. They are called :

FDISK for setting up the MS-DOS drive sectors
ADISK for setting up the Amiga-DOS drive sectors

For further information, read chapter 5.4 of the PC-DOS manual.

Note that you can have up to four partitions on the hard disk card, one of which can be an MS-DOS partition.

To create two partitions of the same capacity, one for each DOS, do the following:

Insert the Sidecar Workbench disk in the Amiga's built-in drive and the MS-DOS disk supplied with the Sidecar in the Sidecar's drive. Open an MS-DOS window and run the program FDISK. Follow the instructions on the screen. when you have decided on the size (for two equal partitions, choose 307 cylinders). After the formatting comes to an end, run the program ADISK. The following menu appears on the screen:

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AMIGA PARTITION SETUP VER 1.1:

Current drive : 00 Total space : 614 cylinders

| Partition | Status | Type | Start | End | Size |
|---|---|---|---|---|---|
| 1 | A | DOS | 0 | 306 | 307 |

< 1 > change current drive

< 2 > change partition status

< 3 > create a new Amiga partition

< 4 > delete the Amiga partition

<ESC> return to DOS

There are the same options for dividing the capacity as under the FDISK program. It is not possible to make an a Amiga partition 'active' because the Amiga can only be started with the KICKSTART disk in the internal disk drive.

After the partition setup comes to an end, the Amiga partition must be formatted. Leave the PC Window open, open a CLI window from the Workbench and execute the following commands:

DJMOUNT <RETURN>

Note: Ignore all the error messages and cancel all the requestors that appear. These occur because the system knows that a hard disk exists but the device is not yet formatted. Now type:

ASSIGN <RETURN>

DPFORMAT DRIVE JH0: NAME "drivename" <RETURN>

The system now puts up a requestor that asks you to insert a disk. Ignore this and simply press <RETURN>. When formatting is complete, an icon appears on the screen indicating the new device. You are now able to use this new drive just like any other drive on the Amiga. All AmigaDOS functions and commands can be used for the hard disk, using the designation JHx: where x is the number of the device (partition).

Note: Commodore recommands that you set up all partitions on the hard disk card at one time.

If you wish, you can install the DJMOUNT command into the startup sequence after the partitions are created. This will auto-

matically mount the hard disk when the Amiga is booted. To do this, type the following from the CLI:

```
ED S/STARTUP-SEQUENCE <RETURN>
```

A new window opens containing the script for the startup sequence. The DJMOUNT command can be inserted at any point following the BINDDRIVERS command. Once you have typed DJMOUNT into the sequence, press the ESCAPE-key. An asterisk (*) appears on the screen. If your sequence is correct, type

```
X <RETURN>
```

This will save the sequence and return you to the CLI. If all is not correct, type

```
Q <RETURN>
```

This will return you to the CLI without changing the sequence and you can start again.

When the mount command is part of the startup sequence, there will be a delay of about half a minute while the disk is mounted and the Sidecar initialised.

If you do not wish to change the sequence, to mount the hard disk you must open a CLI and type DJMOUNT whenever you start up you system.ir

## Appendix E : The 8087 numeric co-processor

The 8087 numeric co-processor is a chip which processes complex mathematical calculations. It is constructed in such a way that it can be used in combination with the 8088 processor in the Sidecar and thus extends the command and arithmetic capabilities.

The 8087 is called a co-processor because it processes instructions in combination with the main processor. During the running of a program which is designed to use the 8087, each processor executes its own tasks. Working together, the two processors considerably accelerate the running speed of applications.

The installation procedure for the 8087 is as follows:

* Disconnect the power to the Sidecar and Amiga and pull them apart.

* Remove the cover on the Sidecar. It is held in place by four screws.

* Loosen the sub-chassis and pull off the plug connections. Pull the chassis slightly to the front, lift it and turn it to the left and lay it down at the same level.

* Next lift out the plate that is now visible.

* Insert the 8087 in the slot to the left of the CPU. The chip must be facing forward.

* Adjust the DIP switches appropriately as explained in Appendix A.

* Reassemble, reversing the above procedure.

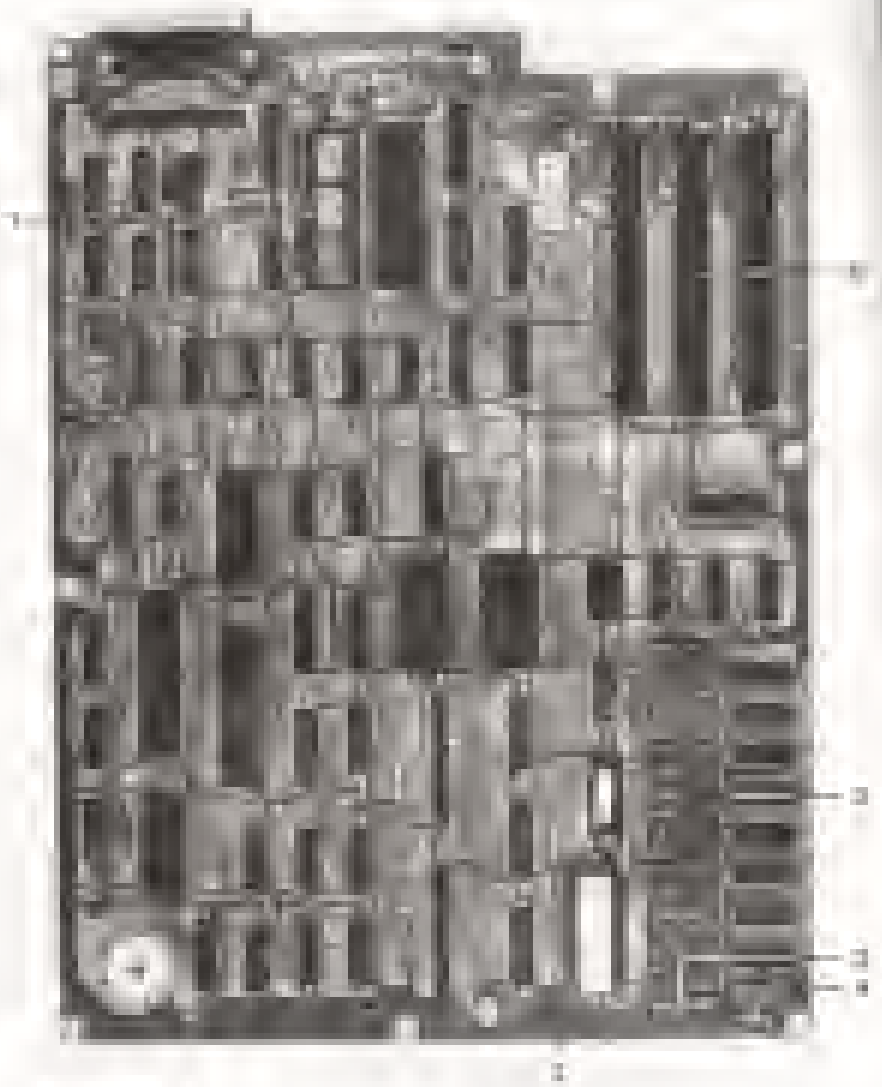


рисунок 4

1. [illegible]
2. [illegible]
3. [illegible]
4. [illegible]
5. [illegible]
6. [illegible]

## Appendix F : RAM expansion for the PC

NOTE : Ensure that there is no power to the Amiga or Sidecar.

RAM (memory) expansion for the Sidecar can be carried out in two different ways.

a) Eight empty sockets (U9-U16) are located on the front right-hand side of the main board. These will accept eight dynamic RAM chips (256K x 1, 150ns) for expansion up to 512K. Insert the chips carefully with the front of the chip facing to the left. To make the RAM expansion on the main board active you have to set up the jumper J11 (see picture 4 and 5).

   When the expansion is done, the appropriate DIP switch must be set (See Appendix A.)

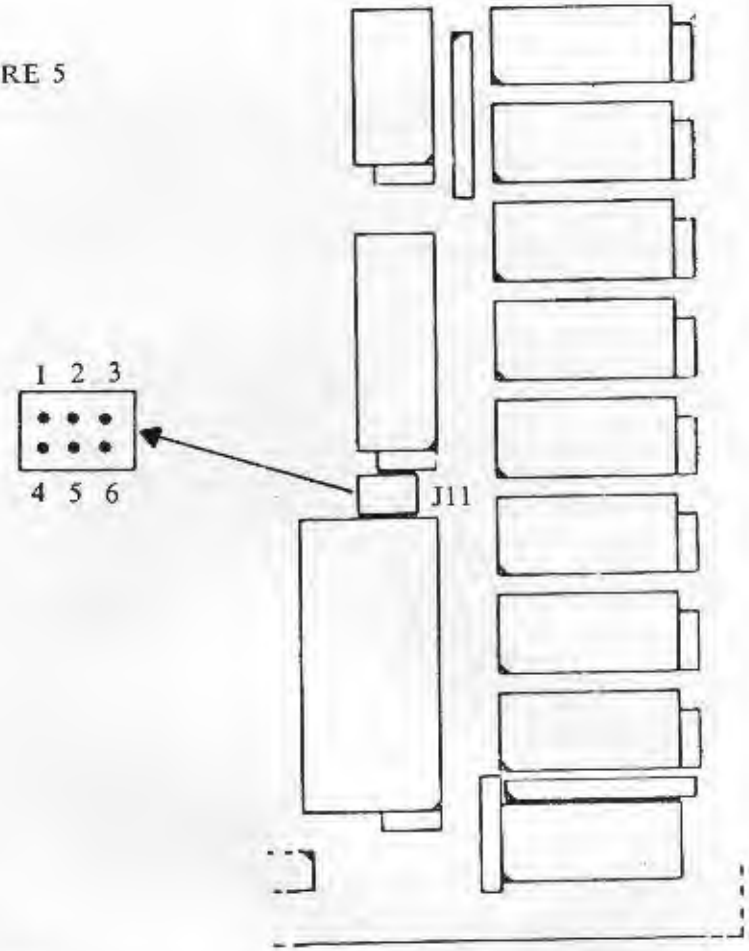
b) A RAM expansion card, which is available from several suppliers may be inserted into one of the slots. Depending on the card, the memory is expanded up to a maximum of 640K. You can do the expansion with the base of 256 K on the main board plus 384 K on the expansion card.

   The alternative is to do the expansion up to 512K on the main board (see paragraph a, above) and the other 128K on the expansion card.

   If the internal RAM expansion is active, the start address for any RAM expansion card must be $80000. If it is not active, the start address for the external card is $40000.

   When the expansion is done, the appropriate DIP switch must be set (See Appendix A.)

PICTURE 5




| RAM size | | Jumper position |
|---|---|---|
| -on main board | 256 K | 1 - 2 |
| - | 512 K | 2 - 3 |
| Internal Printer | | |
| -Interface enabled | | 5 - 6 |
| -Interface disabled (external Printer Card allowed) | | 4 - 5 |

## Appendix G : RAM expansion for the Amiga

Note: Ensure that the Amiga/Sidecar System is switched off.

Using a 1 MB card the memory capacity of the Amiga is increased. Initially this card is charged to 1/2 MB. Complete assembly is carried out seperately.
When the sub-chassis is lifted, a plate becomes visible. The looped-in 90-polar expansion port (J6) of the Amiga is located at the left hand side of this plate. The expanssion card is pushed onto the plug.

Re-install the sub-chassis and secure.

BESCHEINIGUNG DES HERSTELLERS

Hiermit wird bestätigt, daß das Sidecar

COMMODORE AMIGA 1060

in Übereinstimmung mit den Bestimmungen der

Amtsblattverfügung Nr. 1046 / 1984

funk-entstört ist.

Der Deutschen Bundespost wurde das Inverkehrbringen dieses Gerätes angezeigt und die Berechtigung zur Überprüfung eingeräumt.

COMMODORE BÜROMASCHINEN GMBH

CERTIFICATE OF THE MANUFACTURER

Herewith we certify that our device Sidecar

COMMODORE AMIGA 1060

corresponds to the regulations

Amtsblattverfügung Nr. 1046 / 1984

is eliminated of radio interference.

The German Bundespost has been informed that this unit is on the market and has got the right to check on the mass production if the limits are kept.

COMMODORE BUSINESS MACHINES LIMITED

**Physical Dimensions**

Size :

| | |
|---|---|
| Width | 270 mm |
| Depth | 380 mm |
| Height | 137 mm |

Weight : 8100 g

Power cord :

| | |
|---|---|
| Length | 550 mm |

Operating Range :

| | |
|---|---|
| Temperature | +5 °C ... +45 °C |
| Humidity | 20 % ... 80 % |

Parts List :

Amiga 1060 Sidecar
3,5" Disk Amiga Kickstart 1.2
3,5" Sidecar System Disk
(Workbench 1.2)
5,25" PC System Disk (MS-DOS)
Sidecar User Manual
PC 10/20 DOS Manual

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